HALOGEN

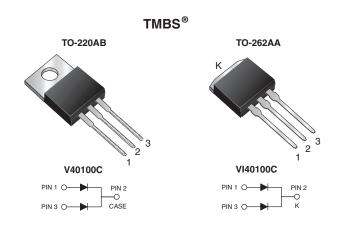
FREE



Vishay General Semiconductor

Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.38 \text{ V}$ at $I_F = 5 \text{ A}$



PRIMARY CHARACTERISTICS					
I _{F(AV)}	2 x 20 A				
V _{RRM}	100 V				
I _{FSM}	250 A				
V _F at I _F = 20 A	0.61 V				
T _J max.	150 °C				
Package	TO-220AB, TO-262AA				
Diode variation	Common cathode				

FEATURES

- Trench MOS Schottky technology
- · Low forward voltage drop, low power losses
- High efficiency operation
- Low thermal resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

For use in high frequency DC/DC converters, switching power supplies, freewheeling diodes, OR-ing diode, and reverse battery protection.

MECHANICAL DATA

Case: TO-220AB and TO-262AA

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and

commercial grade

Terminals: matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs max.

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	V40100C	VI40100C	UNIT		
Max. repetitive peak reverse voltage		V_{RRM}	100		V	
Max. average forward rectified current (fig. 1)	per device	I	40		А	
	per diode	I _{F(AV)}	20			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}	250		А		
Voltage rate of change (rated V _R)		dV/dt	10 000		V/µs	
Operating junction and storage temperature range		T _J , T _{STG}	-40 to	+150	°C	



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	V _F ⁽¹⁾	0.47	-	V	
	I _F = 10 A			0.54	-		
	I _F = 20 A			0.67	0.73		
	I _F = 5 A	T _A = 125 °C		0.38	-		
	I _F = 10 A			0.45	-		
	I _F = 20 A			0.61	0.67		
Reverse current at rated V _R per diode	$I V_D = 70 V \vdash$	T _A = 25 °C	- I _R ⁽²⁾	9	-	μΑ	
		T _A = 125 °C		10	-	mA	
	I V _P = 100 V ⊢	T _A = 25 °C		-	1000	μΑ	
		T _A = 125 °C		21	45	mA	

Notes

 $^{(1)}$ Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL V40100C VI40100C		UNIT		
Typical thermal resistance per diode	$R_{\theta JC}$	2.0		°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AB	V40100C-M3/4W	1.85	4W	50/tube	Tube		
TO-262AA	VI40100C-M3/4W	1.45	4W	50/tube	Tube		

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

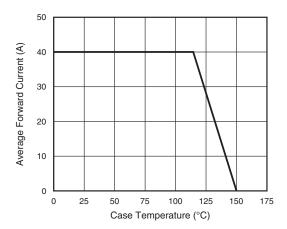


Fig. 1 - Forward Current Derating Curve

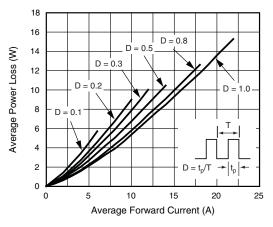


Fig. 2 - Forward Power Loss Characteristics Per Diode

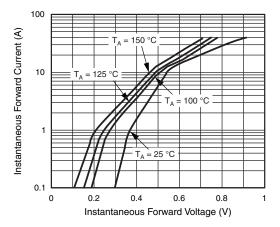


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

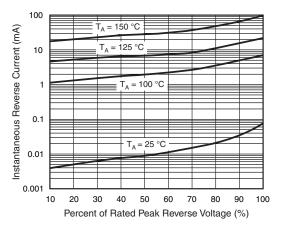


Fig. 4 - Typical Reverse Characteristics Per Diode

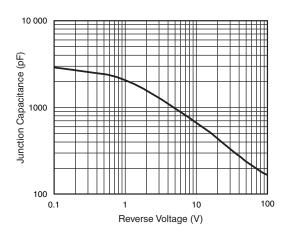


Fig. 5 - Typical Junction Capacitance Per Diode

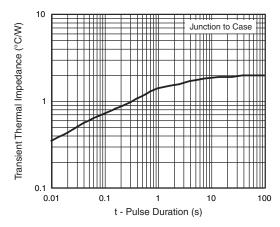
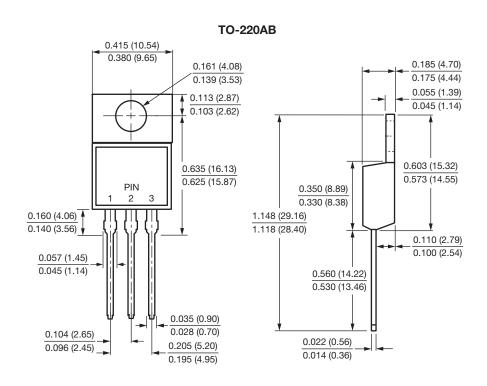


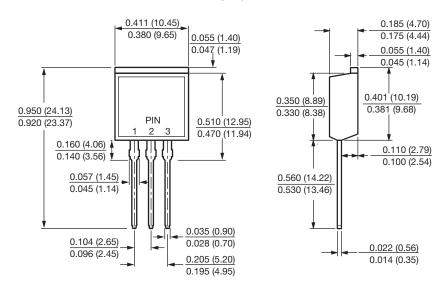
Fig. 6 - Typical Transient Thermal Impedance Per Diode

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



TO-262AA





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